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**CONCURRENT UTILIZATION OF CHIROPRACTIC,
PRESCRIPTION MEDICINES, NONPRESCRIPTION MEDICINES
AND ALTERNATIVE HEALTH CARE**

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ABSTRACT

This study examines the use of chiropractic, prescription medicines, nonprescription medicines and alternative health care for two independent samples representative of the population of Edmonton, Alberta, Canada in 1979 (n=439) and again in 1988 (n=464). While the usage of prescription medicines was unchanged from 1979 to 1988, utilization of nonprescription medicines, chiropractic and alternative health care increased. Users of chiropractic tended to be concurrent users of the conventional health care system, but were also much more likely to utilize alternative health care. This study shows that Edmontonians tend to select their health care concurrently from various health care modalities including both prescription and nonprescription medicines and conventional and alternative health care.

Concurrent Utilization of Chiropractic, Prescription Medicines, Nonprescription Medicines and Alternative Health Care

Canadians utilize a wide variety of health care modalities including conventional health care (e.g., medical doctors and prescription medicines), self-medication (e.g., "over-the-counter" medications and home remedies) and alternative health care (e.g., chiropractors, naturopaths, acupuncturists). This study examines chiropractic utilization in Edmonton, Alberta, Canada in 1988 and 1979 and the concurrent utilization of various health care modalities.

While chiropractic has typically been viewed as one aspect of alternative health care, it is increasingly being incorporated into the conventional health care system (Biggs, 1988; Wardwell, 1988; Coburn and Biggs, 1987; Coulter, 1987). Chiropractors are licensed in all Canadian provinces except Newfoundland and, where licensed, are covered by the provincial medical care insurance programs (up to a limited number of visits per year except in Saskatchewan where there is full coverage) (Clarke, 1990:267-268; Biggs, 1988). Utilization of chiropractic in Canada ranges from 5 to 15% of the population annually, depending on the province (Sutherland and Fulton, 1988:97). The Canadian Chiropractic Association estimates annual utilization of chiropractic at 6 to 10% of the population for Canada as a whole. Data from the Saskatchewan Medical Care Commission show that 10% of that province's population utilized chiropractic services at least once in 1985-86, up from 5% in 1973 (Biggs, 1988:335-336). A poll conducted by the Canada Health Monitor found that 20% of Canadians used some form of alternative health care in the first six months of 1990; of these, half visited a chiropractor (Canadian Medical Association Journal, 1991:469).

While substantial numbers of Canadians utilize chiropractic and other alternative health care therapies, by comparison, 80 to 85% of Canadians visit a medical doctor at least once a year (Sutherland and Fulton, 1988:97) and substantial numbers use prescription and nonprescription medicines. The Canada Health Survey of 1978-79 found that 48% of Canadians had used at least one prescription or nonprescription medication in the past two days. Of these, 60% reported taking at least one medication on the advice of a medical doctor. Furthermore, respondents indicated that while prescription medicines were almost always taken on the advice of a doctor, many of the nonprescription medications were also taken "on advice" (Canada Health Survey, 1981:163-166). Nevertheless, self-medication among Canadians, including the altered use of prescription drugs, is extensive (Segall, 1990).

There are two differing hypotheses with respect to the utilization of prescription and nonprescription medicines and conventional and alternative health care. One hypothesis suggests that utilization tends to be noncurrent. In other words, this hypothesis suggests that users of the conventional health care system and of prescription medicines tend not to be users of the alternative health care system and tend to be less likely to utilize nonprescription medicines (such as herbal remedies). Vice versa, this hypothesis suggests that users of alternative health care and nonprescription medications are less likely to be users of the conventional health care system (Coe, 1978:242-244; Wolinsky, 1980:297; Biggs, 1988:330; Mechanic, 1978:419-421). More recently, evidence has begun to emerge in support of a second hypothesis that suggests that utilization of the conventional and alternative health care systems and of prescribed and nonprescribed medications tends to be concurrent (Segall, 1990;

Murray and Rubel, 1992; Canada Health Survey, 1981:163-166; Coulter, 1987:391; Canadian Medical Association Journal, 1991:469; Shapiro, 1983; Cassileth, et al., 1984; Kronenfeld and Wasner, 1982; Donnelly, et al., 1985; Fulder and Munro, 1985; Furnham and Smith, 1988; Kestin, et al., 1985; Smart et al., 1986; King, et al., 1988; and Verhoef, et al., 1990).

It is the purpose of this study to examine the utilization of chiropractic, prescription medicines, nonprescription medicines, and alternative health care in Edmonton, Alberta, Canada in 1988 and 1979 focussing on levels of utilization, trends in utilization, and patterns of concurrent utilization. That is, it is the purpose of this study to examine the extent to which users of chiropractic are also users of prescription medicines, nonprescription medicines, and alternative health care.

METHODS

A representative sample of adult Edmontonians (18 years of age and older) was interviewed face-to-face in February of 1979 (n=439) and a second independent sample, also representative of all adult Edmontonians, was interviewed face-to-face in February of 1988 (n=464). Both of these studies were done as part of the annual Edmonton Area Survey. Both samples were obtained using a two-stage selection process. First, a random sample of households was selected from the computerized list of addresses compiled by the city in a complete enumeration accomplished in the most recent civic census (the relevant censuses were conducted in 1987 and 1978, about 8 months prior to sample selection). Second, an equal number of male and female respondents were selected, one from each household. The response rate in 1988 was 80% and in 1979 was 75%. Not only were the 1979 and 1988 samples

representative of the larger population but they were also comparable to each other. Calculations using the index of dissimilarity indicated that these two samples were comparable on the basis of age, sex, marital status and education.

Respondents in both 1979 and 1988 were asked: "How many different kinds of prescription medicines have you used in the past week?" and "Have you used any of the following nonprescription medicines in the past week: pain relievers such as aspirin, stomach remedies or medicines, laxatives, cough or cold remedies, skin ointments or salves, vitamins or minerals and any other nonprescription medication?" In addition, respondents in 1988 were asked "Have you in the past twelve months used any of the following: chiropractic treatment, hypnotherapy, psychological therapy, meditation (e.g., T.M.), megavitamin therapy, herbal remedies, Ayurvedic medicine, acupuncture/acupressure, imaging/visualization, holistic health care/homeopathy/naturopathy, zone therapy/reflexology/reflex therapy, mind control/mind awareness/mind development, psychic/spiritual/Yogic healing, and any other alternative therapy?" This same question was asked in 1979 except that the list of therapies varied somewhat. Psychological therapy, megavitamin therapy, Ayurvedic medicine, imaging/visualization and holistic health care were not included in the 1979 questionnaire and meditation (e.g., T.M) was listed simply as T.M. in 1979. Nevertheless, the 1979 and 1988 lists of alternative health care provide comparable total use statistics given that both lists have an "other" category.

The percentages of respondents who were users of prescription medicines, nonprescription medicines, chiropractic, and alternative health care therapies are reported in the following. Trends in rates of usage are noted. Concurrent usage with

chiropractic is assessed by comparing the percentages of respondents who were users of prescription medicines, nonprescription medicines, and of alternative health care for users and nonusers of chiropractic. Statistical significance is determined by Chi Square (X^2).

FINDINGS

Table 1 indicates that annual chiropractic utilization has increased from 1979 to 1988. While the increase appears to be substantial, it is not statistically significant ($X^2 = 1.736$; $p = .19$). Annual usage of alternative health care therapies (other than chiropractic) has also increased from 1979 to 1988. This increase is statistically significant ($X^2 = 4.549$; $p = .04$). Further, the use of nonprescription medicines, which is almost two times as prevalent as the use of prescription medicines, shows a significant increase from 1979 to 1988 ($X^2 = 4.749$; $p = .03$). In contrast, the usage of prescription medicines has remained virtually unchanged ($X^2 = 0.040$; $p = .85$).

Table 2 shows concurrent usage of prescription medicines, nonprescription medicines, and alternative health care for users of chiropractic. In both 1979 and 1988, users of chiropractic were much more likely to be users of alternative health care. These patterns were statistically significant. Similarly, in both 1979 and 1988, users of chiropractic were somewhat more likely to have recently used nonprescription medicines; however, these patterns were not statistically significant. In contrast, in both 1979 and 1988, there were no differences between users and nonusers of chiropractic with regard to recent utilization of prescription medicines.

Table 1
Utilization of Selected Health Care Modalities, 1979 and 1988

Health Care Modality	Percentage Utilization		Increase in Utilization ²	
	1979	1988	%	Sig. ³
Chiropractic, past 12 months	8.2	10.8	31.1	.19
Alternative Health Care, ¹ past 12 months	9.8	14.4	46.8	.04
Prescription Medicines, past week	33.6	34.3	1.7	.85
Nonprescription Medicines, past week	59.8	66.8	11.6	.03
	(n = 439)	(n = 464)		

1. Not including chiropractic
2. (1988-1979) ÷ 1979 x 100
3. Chi Square probability

Table 2
Utilization of Selected Health Care Modalities
by Utilization of Chiropractic, 1979 and 1988

Chiropractic Utilization, in past 12 months	Percentage Utilization Prescription Medicines, in past week		Percentage Utilization Nonprescription Medicines, in past week		Percentage Utilization Alternative Health Care, in past 12 months		n
	Yes	No	Yes	No	Yes	No	
1979							
Yes	33.3	66.7	66.7	33.3	19.4	80.6	36
No	33.7	66.3	59.2	40.8	8.9	91.1	403
	$X^2 = .002; p = .97$		$X^2 = .766; p = .38$		$X^2 = 4.133; p = .04$		
1988							
Yes	34.0	66.0	76.0	24.0	26.0	74.0	50
No	34.3	65.7	65.7	34.3	13.0	87.0	414
	$X^2 = .002; p = .97$		$X^2 = 2.134; p = .14$		$X^2 = 6.06; p = .01$		

DISCUSSION

Given that prescription medicines are typically obtained from medical doctors, the finding that users of chiropractic tend to be users of prescription medicines indicates concurrent use of the conventional health care system. Furthermore, the finding that users of chiropractic, in comparison to nonusers of chiropractic, are neither less nor more likely to use prescription medicines indicates that chiropractic users do not differ from nonusers in their utilization of the conventional health care system. While users of chiropractic may be somewhat more likely to use nonprescription medicines and are more likely to use various alternative health care therapies, nevertheless, nonusers of chiropractic also make substantial use of nonprescription medicines and a substantial minority utilize alternative health care therapies. While nonuse of chiropractic might signify a preference for conventional health care, nevertheless, this study indicates that nonusers of chiropractic are often users of nonprescription medicines and/or of alternative health care. In short, both users and nonusers of chiropractic tend to be concurrent users of various health care modalities including conventional health care, alternative health care and nonprescription medicines.

Edmontonians in 1988 and in 1979 chose their health care from a wide variety of modalities, including the conventional health care system (the medical doctor and prescription medicines), the alternative health care system of which the chiropractor is most commonly utilized, and nonprescription medicines whether self-prescribed or taken "on the advice" of a doctor, a pharmacist or an alternative healer. Usage of these alternatives to the conventional health care system is widespread and increasing.

This increased utilization reflects a growing interest in holistic health care, health promotion, disease prevention, and self-care. While these themes tend to be identified more with alternative approaches to health care, nevertheless, the hypothesis of noncurrent usage is not supported. Instead, these various health care "alternatives" tend to be used concurrently with the conventional health care system.

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